

(12) **United States Patent**  
**Bruwer**

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(54) **USER INTERFACE WITH PROXIMITY SENSING**

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This patent is subject to a terminal disclaimer.

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(58) **Field of Classification Search**  
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(57) **ABSTRACT**

An electronic circuit including a microchip for use as an intelligent user interface also comprises touch sensor technology that differentiates between proximity and physical contact events to activate and control various loads including light bulbs, products with radio frequency circuitry or electric motors. An input to the microchip is connected to a switch or sensing structure that does not form a serial link between the power source and the load. The electronic circuit controls various functions in response to user actions including automatic delayed shut-off functions, find-in-the-dark indicator and power source level/product state indications. The microchip allows the user to select specific functions based on the time duration of activation signals, the time duration between activation signals and the number of activation signals at the input. The microchip is further configured to interpret and react to the signals received from a user in a way that enhances ease of use of the product and to use the indicators to provide information to the user that is influenced by the signals received as well as the state of the product.

**31 Claims, 6 Drawing Sheets**

